

970
 DESCRIPTIONS OF FOUR NEW SPECIES OF *ANOPHELES*
 FROM INDIA.

BY LIEUT.-COL. G. M. GILES, M.B., F.R.C.S., I.M.S., RETD.

On comparing the collection brought home, with the enormous mass of material in the British Museum, recently arranged and described by Mr. Theobald, we found the four additional new forms described below.

One of them is specially interesting for the way in which it mimicks *Culex*, as not only does the insect closely resemble the common grey Indian gnat, *C. fatigans*, Wied., but it also copies the attitude of the rival genus when resting, the females in especial, sitting "humped up" in exactly the same way as those of the type genus of the family. So much is this the case, that on arriving at night at the rest-house where I first met with the species, I was completely "taken in" by the fraud, and felt quite safe in dispensing with mosquito curtains. On this account the species has been named *An. culicifacies*. Two of the others come from the Berars, on the Dakhan Plateau, and the third appears to be a purely hill species hailing from the Nehilgerri Hills. Although equalled by some American examples of *An. maculipennis*, it is certainly the largest of our Indian forms, and has accordingly been named "*gigas*."

ANOPHELES GIGAS, sp. n.

Wing with the costa black, interrupted by a comparatively small fulvous spot opposite the basal half of the ant. fork-stem; in addition to which there is a large apical spot, and the base of the wing is generally pale, except the actual base of the costa, which has here a black length cut in two by a minute white dot, so that the general appearance is that of two large black triangular areas, with their bases on the costa, the inner part of the wing being mainly pale, with but few black vein-spots. The internal fringe is pale at the apex and generally, towards the base, and the intervening dark portion shows pale patches at the longitudinal junctions. In the ♂ the whole wing is much lighter, there is an additional light spot near the apex, and the entire fringe is yellow. Thorax of a deep chocolate-brown ground colour, the dorsum covered with a velvety, greyish bloom, so arranged as to leave bare a median and a pair of lateral darker lines. Abdomen dark brown, with some lighter hairs, and showing on the terga some lighter tomentum, like that on the thorax.

♀.—General coloration deep chocolate throughout, the head with the vertex and frontal tuft yellowish. Antennæ two-thirds the length of the proboscis, which is distinctly longer than the quite unbanded palpi. Halteres with pale stems and dark knobs.

♂.—Altogether lighter, the palpi golden-brown, with dense terminal tufts of hairs to the joints, about equalling the proboscis in length. Most of the upper

tarsal joints show quite distinct lighter yellow apical bands, though they are quite imperceptible in the ♀. His fore-ungues, besides the usual accessory tooth, have a strong additional one close to the base, representing probably the other claw, which appears wanting, those of the mid and hind legs are simple and symmetrical.

Length, 9—10 mm.

Hab. : Sent me by Dr. Price, I.M.S., Retd., of Conoor, Nehilgerri Hills, where the species appears fairly common, though it does not appear to occur in the plains, Conoor lying at an elevation of over 6000 feet above the sea level.

ANOPHELES CULICIFACIES, *sp. n.*

Wings with the costa black, except at the apex, interrupted by four small straw-coloured spots, which grow progressively smaller from base to apex, all involving the second long vein; there is another distinct light spot over the cross veins, and three more on the principal bifurcations of the long veins, but in the main the wing is very dark, and the fringe shows no pale patches. Tarsi unbanded, nearly black. Thorax dark-grounded, covered with yellow scales, so arranged as to show a median and a pair of lateral dark bare lines. Abdominal segments conspicuously basally banded with yellowish, being in the fresh state completely clothed with yellowish and deep brown scales. Head black, with whitish fork scales on the vertex, but with the frontal tuft ill marked. Antennæ, ♂, dark brown, about three-fourths the length of the proboscis; palpi of ♂ black, about the length of the proboscis, with yellowish rings on the last two articulations, and a lighter tip; of ♀, black, except the whole of the last joint, and, two bands on the next two articulations, which are straw-coloured, and as the penultimate joint is long, the second is well down towards the base. Legs black throughout, except minute yellow bands on the apices of the tibæ.

When seen at rest this mosquito presents a close resemblance to *C. fatigans*, Wied., as, apart from the conspicuous abdominal banding, the female habitually sits humped up like a *Culex*, while even the males keep the body no more than parallel to the surface they rest on.

Length, 3.5—4 mm.

Hab. : Hoshangabad, Central Provinces, and the Benars, India.

ANOPHELES LISTONI, *sp. n.*

Wing with the costa black, including the actual base, with four yellow spots distinct, but much smaller than the intervening black portions, the largest light area being that quite at the base; there is also an apical spot; the remaining long veins are mainly black, but all of them show short lengths of white scales, and a line of these over the cross veins, combined with one of the costal spots, forms a distinct light stripe across the wing. The fringe is dark, except at the apex, and indistinct paler patches opposite one or two of the longitudinal functions. Tarsi dark, unbanded. Thorax and abdomen much as in *A. funestus*, mihi. Head black, with a robust frontal tuft; forked scales mostly dark in the ♀, but with many white ones behind in the ♂. Palpi of ♀, black, with two narrow rings and a minute tip of white, slightly shorter than the proboscis; those of the ♂, as spots, as the proboscis, black-tipped, but with two whitish bands.

This species a good deal resembles *An. funestus*, but has an additional white spot close to the base of the costa, and there are no sharply defined interruptions of the internal wing-fringe, as in that species. Length, 3.5—4 mm.

Hab. : Ellichpur, in the Berars, India.

ANOPHELES THEOBALDI, *sp. n.*

♀.—Wing jet black, with the costa interrupted by five obvious white spots, the basal dots being nearly as large as the spots further out; in addition, there is an apical spot, and the other long veins, though mainly black, are elaborately marked with white lengths, and the fringe is interrupted at the junctions of all the long veins and their branches. The last two hind tarsal joints, with the apices of the other three, are pure white; and the first two of the mid, and the first three of the fore tarsals, are apically white-banded. The thorax and scutellum are sooty grounded, with broad lines of white scales, two lateral, and two sub-median. Abdomen sooty, nude, with brownish hairs.

The head is black, with a bifid white frontal tuft, the nuchal crown white, and the nape black-scaled. Antennæ black, with whitish verticils. Proboscis sooty. Palpi intensely black, with the whole terminal joint, and minute apical rings on the next three joints, snowy white. Halteres with white stems and black knobs. Legs brindled with white scales throughout, the white preponderating on the lower surfaces, with white knee spots and a large sub-apical white patch on the femora; the tibiæ and first tarsal joints elaborately white-ringed, especially so on the mid legs. Length, about 3 mm.

This species was sent me first by Lieut. Glen Liston, I.M.S., from Ellichpur, in the Berars, with a note pointing out its distinctness from any species mentioned in the first edition of my "Handbook of Gnats and Mosquitos," and though, on first sorting my collection, I was inclined to regard it as a dark variety of *An. Jamesii*, its distinctness was at once detected by Mr. Theobald when we came to compare my collection with the types of that species in the Museum. It differs from that species in possessing the additional apical wing-spot, although the wing is generally darker, the second long vein being entirely black, and in but two, instead of three, of the last hind tarsals, being all white.

Hab. : Ellichpur, in the Indian Berars, and also taken in my house at Shahjahanpür, N.W.P., on October 19th, 1900.

London: July, 1901.

Rare Diptera in Herefordshire.—During Whit week I was collecting on the Herefordshire side of the Malvern Hills, chiefly near to West Malvern. Amongst other things I obtained was a specimen of *Brachypalpus bimaculatus*, Mcq. This species is only recorded by Mr. Verrall in his recent work from five localities, and I believe only one or two specimens have been found in each place, so that it remains a very rare species at present. One of the localities was Ledbury, in Herefordshire, not more than eight or ten miles away from where I took it this time. I also found *Cheilosia the joata*, Fall., not uncommon on wild garlic in a very limited area at